

10/506,305

(FILE 'HOME' ENTERED AT 11:24:35 ON 05 APR 2007)

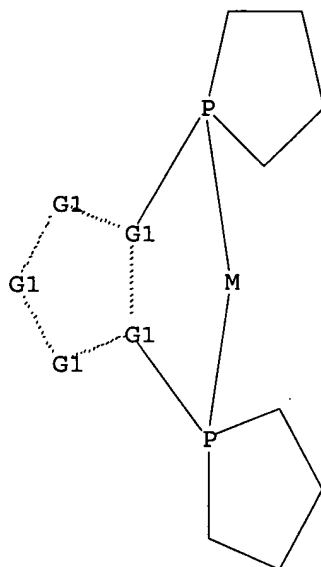
FILE 'REGISTRY' ENTERED AT 11:24:52 ON 05 APR 2007

L1 STRUCTURE UPLOADED

=> d l1

L1 HAS NO ANSWERS

L1 STR



G1 C,O,S,N

Structure attributes must be viewed using STN Express query preparation.

=> s l1

SAMPLE SEARCH INITIATED 11:25:15 FILE 'REGISTRY'

SAMPLE SCREEN SEARCH COMPLETED - 5552 TO ITERATE

36.0% PROCESSED 2000 ITERATIONS

0 ANSWERS

INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)

SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*

BATCH \*\*COMPLETE\*\*

PROJECTED ITERATIONS: 106573 TO 115507

PROJECTED ANSWERS: 0 TO 0

L2 0 SEA SSS SAM L1

=> s l1 full

FULL SEARCH INITIATED 11:25:20 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 110155 TO ITERATE

100.0% PROCESSED 110155 ITERATIONS

58 ANSWERS

SEARCH TIME: 00.00.01

L3 58 SEA SSS FUL L1

=> fil caplus

COST IN U.S. DOLLARS

SINCE FILE  
ENTRY

TOTAL  
SESSION

FULL ESTIMATED COST

172.10

172.31

FILE 'CAPLUS' ENTERED AT 11:25:25 ON 05 APR 2007  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
COPYRIGHT (C) 2007 AMERICAN CHEMICAL SOCIETY (ACS)

Copyright of the articles to which records in this database refer is held by the publishers listed in the PUBLISHER (PB) field (available for records published or updated in Chemical Abstracts after December 26, 1996), unless otherwise indicated in the original publications. The CA Lexicon is the copyrighted intellectual property of the American Chemical Society and is provided to assist you in searching databases on STN. Any dissemination, distribution, copying, or storing of this information, without the prior written consent of CAS, is strictly prohibited.

FILE COVERS 1907 - 5 Apr 2007 VOL 146 ISS 15  
FILE LAST UPDATED: 4 Apr 2007 (20070404/ED)

Effective October 17, 2005, revised CAS Information Use Policies apply. They are available for your review at:

<http://www.cas.org/infopolicy.html>

=> s l3

L4 21 L3

=> d 1-21 bib abs

L4 ANSWER 1 OF 21 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2006:1006042 CAPLUS  
DN 145:336181  
TI Electron-acceptor bis-phospholane ligands for transition metal catalysts  
IN Holz, Jens; Boerner, Armin; Zayas, Odalys; Perea, Juan Jose Almena;  
Kadyrov, Renat; Monsees, Axel; Riermeier, Thomas  
PA Degussa AG, Germany  
SO Ger. Offen., 17pp.  
CODEN: GWXXBX  
DT Patent  
LA German  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 102005014054	A1	20060928	DE 2005-102005014054	20050323
	WO 2006100165	A1	20060928	WO 2006-EP60092	20060220
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				

PRAI DE 2005-102005014054 A 20050323

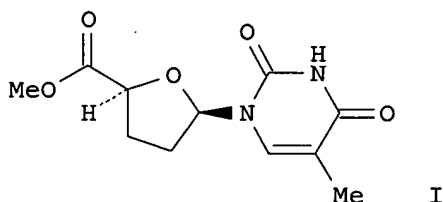
OS MARPAT 145:336181

AB Chiral bis-phospholanes (R3R4R7R8C4H4P)2A [1, A = unsatd. (sp2)C2-bridge being a part of 4-8-membered ring containing electron-withdrawing substituents, preferably containing F, Cl, CF3, CF3CO, CF3SO2, CnF2n+1,

preferably 3,3,4,4-tetrafluorocyclobutene-1,2-diyl, 3,3,4,4,5,5-hexafluorocyclopentene-1,2-diyl; R<sub>3</sub>, R<sub>4</sub>, R<sub>7</sub>, R<sub>8</sub> = C<sub>1</sub>-8 alkyl(oxy), hydroxy-C<sub>1</sub>-8 alkyl, C<sub>2</sub>-8 alkoxyalkyl, C<sub>6</sub>-18 (hetero)aryl, aralkyl, and combinations thereof] and their complexes with transition metals, useful as ligands for asym. addition and substitution reactions, were prepared by reaction of organometallic phospholane derivs. R<sub>3</sub>R<sub>4</sub>R<sub>7</sub>R<sub>8</sub>C<sub>4</sub>H<sub>4</sub>PM (M = Li, Na, K, Mg, Ca, silyl) with compds. AX<sub>2</sub> (X = halo, sulfonyl). The use of the ligands 1 and their transition metal complexes as catalysts for asym. hydrogenation, hydroformylation, rearrangement, allylic alkylation, cyclopropanation, hydrosilylation, transfer hydrogenation, hydroboration, hydrocyanation, hydrocarboxylation, aldol and Heck reactions is claimed. In an example, ligand (R,R)-1 (L, A = 3,3,4,4-tetrafluorocyclobutene-1,2-diyl; R<sub>3</sub>, R<sub>4</sub> = Me, R<sub>7</sub>, R<sub>8</sub> = H) and its rhodium complex [(L)Rh(cod)]<sup>+</sup>BF<sub>4</sub><sup>-</sup> were prepared by reaction of 1,2-dichloro-3,3,4,4-tetrafluorocyclobutene with (R,R)-2,5-dimethyl-1-(trimethylsilyl)phospholane with subsequent complexation with [(cod)<sub>2</sub>Rh]<sup>+</sup>BF<sub>4</sub><sup>-</sup>. In another example, asym. hydrogenation of Me α-acetamidocinnamate catalyzed by the complex [(L)Rh(cod)]<sup>+</sup>BF<sub>4</sub><sup>-</sup> gave N-acetyl-D-phenylalanine with 81.6% ee.

RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 2 OF 21 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2006:782761 CAPLUS  
DN 145:397459  
TI Asymmetric Homogeneous Hydrogenation of 2,5-Disubstituted Furans  
AU Feiertag, Petra; Albert, Martin; Nettekoven, Ulrike; Spindler, Felix  
CS Institut fuer Organische Chemie, Technische Universitaet Graz, Graz, A-8010, Austria  
SO Organic Letters (2006), 8(18), 4133-4135  
CODEN: ORLEF7; ISSN: 1523-7060  
PB American Chemical Society  
DT Journal  
LA English  
OS CASREACT 145:397459  
GI



AB A homogeneous catalyst system for the asym. cis-hydrogenation of 2,5-disubstituted furans leading to 2',3'-dideoxynucleoside analog I, is described. Best enantioselectivities (ee values of up to 72%) were obtained with cationic rhodium complexes ligated by diphospholanes of the butiphane family. The selectivity of the hydrogenation was reversed by the addition of a base or a polar protic solvent in certain cases. Ferrocene- and proline-based systems gave significant, but lower, ee values.

RE.CNT 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 3 OF 21 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2006:682195 CAPLUS  
DN 145:294954  
TI A highly tunable family of chiral bisphospholanes for Rh-catalyzed enantioselective hydrogenation reactions  
AU Holz, Jens; Zayas, Odalys; Jiao, Haijun; Baumann, Wolfgang; Spannenberg,

Anke; Monsees, Axel; Riermeier, Thomas H.; Almena, Juan; Kadyrov, Renat; Boerner, Armin

CS Leibniz-Institut fuer Katalyse e.V. an der Universitaet Rostock, Rostock, 18059, Germany

SO Chemistry--A European Journal (2006), 12(19), 5001-5013  
CODEN: CEUJED; ISSN: 0947-6539

PB Wiley-VCH Verlag GmbH & Co. KGaA

DT Journal

LA English

AB A set of 16 closely related bisphospholane ligands were prepared by a highly flexible and convergent approach. Each synthesis can be performed on industrially relevant scale. The bisphosphines differ in the nature of the bridge connecting both phospholane units. Bridges are formed by three-, four-, five- and six-membered heterocyclic or alicyclic rings. Bisphospholanes and their Rh pre-catalysts were studied by using results of theor. calcns. (DFT) and analytic measurements (31P and 103Rh NMR spectroscopy, x-ray structure anal.). The studies showed that catalysts based on ligands with maleic anhydride or maleimide structure bridges give constantly superior enantioselectivity in methanol solvent, for methylacetamidocinnamate and Me itaconate and  $\beta$ -dehydro-amino acid precursor substrates. This may account for optimized steric and electronic effects. However, by changing the solvent, catalysts with other backbone can give rise to excellent results. Simple correlations between steric and electronic properties were established. Results of enantioselective hydrogenation frequently claimed in the literature are not general.

RE.CNT 122 THERE ARE 122 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 4 OF 21 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2006:511307 CAPLUS

DN 145:27864

TI Process for preparation of chiral 4-arylpiperidine derivatives

IN Boice, Genevieve N.; McWilliams, J. Christopher; Murry, Jerry A.; Savarin, Cecile G.

PA Merck & Co., Inc., USA

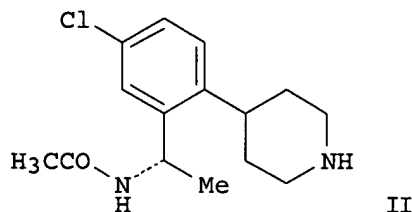
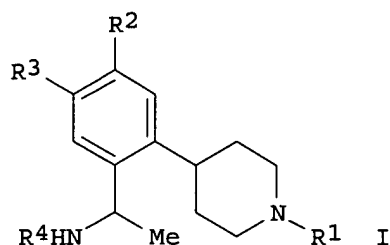
SO PCT Int. Appl., 41 pp.  
CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2006057904	A1	20060601	WO 2005-US41839	20051118
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
PRAI US 2004-630246P	P	20041123		
OS CASREACT 145:27864; MARPAT 145:27864				
GI				



AB The present invention provides an efficient process for the preparation of chiral 4-arylpiperidine amides I [wherein R1 = CO<sub>2</sub>Ph, Cbz, BOC, or benzyl; R2 and R3 = independently H, F, Cl, NO<sub>2</sub>, CF<sub>3</sub>, etc.; R4 = C(=O)R<sub>5</sub>; R<sub>5</sub> = (cyclo)alkyl, benzyl, or (hetero)aryl] or salts thereof comprising enantiomerically reducing the corresponding enamide intermediates. For example, 4-(4-chloro-2-cyanophenyl)-1-piperidinecarboxylic acid 1,1-dimethylethyl ester was treated with MeLi•LiBr, followed by the addition of acetic anhydride to give enamide. The enamide intermediate obtained in the previous step was hydrogenated in isopropanol in the presence of (S-MeBPE)Rh(COD)BF<sub>4</sub>, followed by deprotection of the BOC group to give II•HCl (99% ee). The process is useful for preparing enantiomerically enriched 4-arylpiperidine amides.

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 5 OF 21 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2006:477334 CAPLUS

DN 145:124723

TI A flexible approach to different families of bidentate P,P ligands as highly efficient ligands for asymmetric catalysis

AU Berens, Ulrich; Englert, Ulli; Geyser, Stefan; Runsink, Jan; Salzer, Albrecht

CS CIBA SC, Basel, 4002, Switz.

SO European Journal of Organic Chemistry (2006), (9), 2100-2109

CODEN: EJOCFK; ISSN: 1434-193X

PB Wiley-VCH Verlag GmbH & Co. KGaA

DT Journal

LA English

OS CASREACT 145:124723

AB A novel and versatile approach has led to the synthesis of various classes of mono- and bidentate phospholane and phosphinite ligands based on a benzothiophene scaffold. The ligand functions in the bidentate ligands can be introduced independently and consecutively. A bis-phospholane ligand as well as its rhodium complex have been characterized by crystal-structure detns. The bis-phospholane ligands were tested in the catalyzed asym. homogeneous hydrogenation of dehydroamino acid derivs., enamides and itaconates and gave ee values of up to 98.7%.

RE.CNT 84 THERE ARE 84 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 6 OF 21 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2006:388437 CAPLUS

DN 144:412699

TI Preparation of new bis-phospholane bidentate chiral phosphine ligands for transition metal catalysis and their rhodium cationic complexes

IN Almena Perea, Juan Jose; Holz, Jens; Boerner, Armin; Kadyrov, Renat; Riermeier, Thomas; Monsees, Axel

PA Degussa A.-G., Germany

SO Ger. Offen., 14 pp.

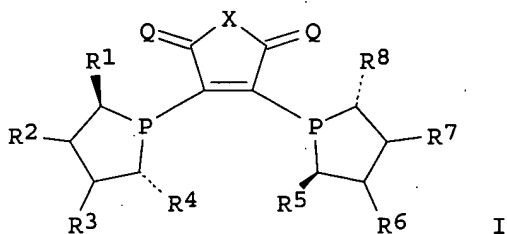
CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 102004051456	A1	20060427	DE 2004-102004051456	20041022
	WO 2006045388	A1	20060504	WO 2005-EP10366	20050924
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
PRAI	DE 2004-102004051456 A		20041022		
OS	CASREACT 144:412699; MARPAT 144:412699				
GI					



AB Bis-phospholanes I (R1, R4, R5, R8 = C1-8 alkyl(oxy), C1-8 hydroxyalkyl, C2-8 alkoxyalkyl, C6-16 aryl, aralkyl, C3-18 hetaryl, C3-8 cycloalkyl, preferably R1, R4, R5, R8 = Me, Et; R2, R3, R6, R7 = H or same as R1, preferably R2, R3, R6, R7 = H; Q = O, S, imino; X = S, optionally substituted methylene, vinylidene, carbonyl, carbonyl-imino; preferably chiral at C2, C5), useful as ligands for transition metal-catalyzed reactions, preferably for asym. hydrogenation and hydroformylation, were prepared by reaction of the corresponding substituted 1-M-phospholanes (M = Li, Na, K, 1/2Mg, 1/2Ca, SiMe3) with 3,4-X2-2,5-thiophenedione, 4,5-X2-4-cyclopentene-1,3-dione (X = leaving group, preferably X = halo, tosylate, triflate, nosylate, mesylate) or their O- and C-analogs. In an example, 3,4-dichloro-2,5-thiophenedione was prepared from 5 g of tetrachlorothiophene by reaction with 13 mL of HNO3 for 5 min with 35% yield; the subsequent reaction with (2R,5R)-2,5-dimethyl-1-trimethylsilylphospholane yielded the ligand I (L; R1, R4, R5, R8 = Me, R2, R3, R6, R7 = H; X = S, Q = O), which was reacted with [(cod)2Rh]BF4 to give [(cod)Rh(L)]BF4 (1); analogous complex [(cod)Rh(L1)]BF4 (2) with cyclopentenedione ligand I (L1, R1, R4, R5, R8 = Me, R2, R3, R6, R7 = H; X = CH2, Q = O) was prepared with 50% yield. In another example, asym. hydrogenation of Me itaconate catalyzed by 2 in methylene chloride gave di-Me (S)-methylsuccinate with 98.9% ee.

L4 ANSWER 7 OF 21 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2006:17494 CAPLUS

DN 145:113793

TI Crystal structure of (η<sup>4</sup>-norborna-2,5-diene){2,3-bis[(S,S)-2,5-dimethylphospholanyl]benzothiophene}rhodium(I) tetrafluoroborate, [Rh(C7H8)(C20H28P2S)][BF<sub>4</sub>]

AU Drexler, H.-J.; Sun, J.-T.; Heller, D.; Berens, U.; Kesselgruber, M.

CS Leibniz-Institut fuer Organische Katalyse an der Universitaet Rostock,  
Rostock, 18059, Germany  
SO Zeitschrift fuer Kristallographie - New Crystal Structures (2005), 220(3),  
435-436  
CODEN: ZKNSFT; ISSN: 1433-7266  
PB Oldenbourg Wissenschaftsverlag GmbH  
DT Journal  
LA English  
AB The title compound is orthorhombic, space group P212121, with a 9.476(2), b  
16.223(3), c 18.615(4) Å; Z = 4; Rgt(F) = 0.045, wRref(F2) = 0.108; T  
= 200 K. Atomic coordinates are given. The dihedral angle between the  
planes P-Rh-P and X-Rh-X (X = centroid of the double bond) is  
2.34(1)°. This is clearly smaller than for observed dihedral angles  
in other bis-phosphane Rh complexes.  
RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 8 OF 21 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2005:842566 CAPLUS  
DN 143:387179  
TI Process-scale total synthesis of nature-identical (-)-(S,S)-7-  
hydroxycalamental in high enantiomeric purity through catalytic  
enantioselective hydrogenation  
AU Benincori, Tiziana; Bruno, Silvana; Celentano, Giuseppe; Pilati, Tullio;  
Ponti, Alessandro; Rizzo, Simona; Sada, Mara; Sanniccolo, Francesco  
CS Dipartimento di Scienze Chimiche ed Ambientali dell'Universita  
dell'Insubria, Como, I-22100, Italy  
SO Helvetica Chimica Acta (2005), 88(7), 1776-1789  
CODEN: HCACAV; ISSN: 0018-019X  
PB Verlag Helvetica Chimica Acta  
DT Journal  
LA English  
OS CASREACT 143:387179  
GI

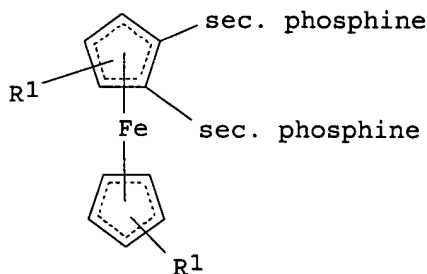
\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB A process-scale stereoselective synthesis of nature-identical  
(-)-(S,S)-7-hydroxycalamenal [(-)-(5S,8S)-5,6,7,8-tetrahydro-3-hydroxy-5-  
methyl-8-(1-methylethyl)naphthalene-2-carbaldehyde; (-)-I] in 96%  
enantiomeric excess (ee) with the aid of chiral Ru complexes has been  
developed. The key step was the enantioselective hydrogenation of easily  
accessible 2-(4-methoxyphenyl)-3-methylbut-2-enoic acid (II) to (+)-III in  
a 86% ee (Scheme 5 and Table 1). A substantial increase in optical purity  
(96% ee) was achieved by induced crystallization of the intermediate  
(+)-3,4-dihydro-4-(1-methylethyl)-7-methoxy-2H-naphthalen-1-one [(+)-IV].  
Computational conformation anal. carried out on the analog (-)-V  
rationalized the high diastereoselectivity achieved in the catalytic  
hydrogenation of the C=C bond.  
RE.CNT 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 9 OF 21 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2005:547608 CAPLUS  
DN 143:78304  
TI Preparation of ferrocenyl-1,2-diphosphines and their metal complexes as  
catalysts for asymmetric synthesis  
IN Lotz, Matthias; Kesselgruber, Martin; Thommen, Marc; Pugin, Benoit  
PA Solvias A.-G., Switz.  
SO PCT Int. Appl., 65 pp.  
CODEN: PIXXD2

DT Patent  
LA German  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2005056568	A1	20050623	WO 2004-EP53389	20041210
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	CA 2548928	A1	20050623	CA 2004-2548928	20041210
	EP 1692151	A1	20060823	EP 2004-820078	20041210
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, IS				
	CN 1894268	A	20070110	CN 2004-80037022	20041210
PRAI	CH 2003-2131	A	20031212		
	WO 2004-EP53389	W	20041210		
OS	CASREACT 143:78304; MARPAT 143:78304				
GI					



I

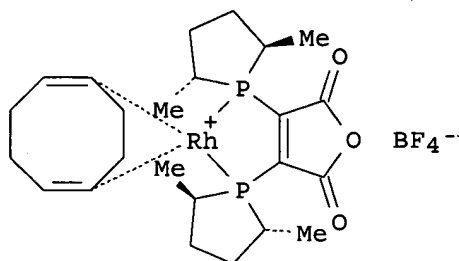
AB The invention relates to preparation of compds., I (R1 = H, C1-4 alkyl, and at least one sec. phosphine depicts an unsubstituted or substituted cyclic phosphine group, or phosphonium salts thereof having one or two monovalent anions or a divalent anion), provided in the form of racemic compds., mixts. of diastereomers or essentially pure diastereomers. I can be obtained by a novel method and are valuable ligands for catalytically active metal complexes in asym. synthesis.

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 10 OF 21 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2005:514491 CAPLUS  
DN 144:170434  
TI (-)-2,3-Bis[(2R,5R)-2,5-dimethylphospholanyl]maleic anhydride  
(1,5-cyclooctadiene)rhodium(I) tetrafluoroborate  
AU Sugi, Kiyoaki  
CS Degussa Japan Co., Ltd., 2-3-1 Nishi-Shinjuku, Tokyo, 163-0938, Japan.  
SO Yuki Gosei Kagaku Kyokaiishi (2005), 63(6), 652-654  
CODEN: YGKKAE; ISSN: 0037-9980



PB Yuki Gosei Kagaku Kyokai  
 DT Journal; General Review  
 LA Japanese  
 GI



AB A review on synthesis, property, handling precautions, and use of the title compound [CatASiumM(R)Rh] (I). The compound I is used as a catalyst for asym. hydrogenation of  $\beta$ -acetamidoacrylate derivs. and itaconic acid derivative

L4 ANSWER 11 OF 21 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2005:479555 CAPLUS

DN 143:172963

TI 2,5-Dimethyl-3,4-bis[(2R,5R)-2,5-dimethylphospholano]thiophene: First Member of the Hetero-DuPHOS Family

AU Benincori, Tiziana; Pilati, Tullio; Rizzo, Simona; Sanniccolo, Franco; Burk, Mark J.; de Ferra, Lorenzo; Ullucci, Elio; Piccolo, Oreste

CS Dipartimento di Scienze Chimiche ed Ambientali, Universita dell'Insubria, Como, 22100, Italy

SO Journal of Organic Chemistry (2005), 70(14), 5436-5441

CODEN: JOCEAH; ISSN: 0022-3263

PB American Chemical Society

DT Journal

LA English

OS CASREACT 143:172963

AB The 2,5-dimethyl-3,4-bis[(2R,5R)-2,5-dimethylphospholano]thiophene (Ulluphos), a new thiophene-based analog of (R,R)-1,2-bis(phospholano)benzene (Me-DuPHOS), was synthesized, geometrically and electronically characterized, and employed as ligand of Rh and Ru in some standard hydrogenation reactions of pro-stereogenic functionalized carbon-carbon and carbon-oxygen double bonds. The synthesis of Ulluphos is much easier than that provided for Me-DuPHOS. Ulluphos and Me-DuPHOS display very similar geometries, while the electronic availability of the former is higher than that exhibited by the latter. Rh and Ru complexes of Ulluphos produced excellent enantiomeric excesses (98.9-99.5%) in the hydrogenation of N-acetyl- $\alpha$ -enamino acids and reaction rates higher than those found when employing the analogous complexes of Me-DuPHOS.

RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 12 OF 21 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2005:472170 CAPLUS

DN 143:26727

TI Process for preparing bisphospholane ligands

IN Riermeier, Thomas; Monsees, Axel; Almendra Perea, Juan Jose; Kadyrov, Renat; Gotov, Batt sengel; Zeiss, Werner; Nagl, Iris; Boerner, Armin; Holz, Jens; Drauz, Karlheinz; Meichelboeck, Wilfried

PA Degussa A.-G., Germany

SO PCT Int. Appl., 27 pp.

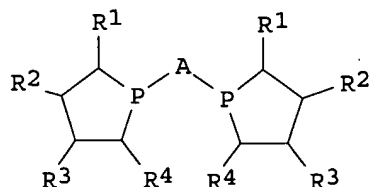
CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2005049629	A1	20050602	WO 2004-EP12279	20041029
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR				
	DE 10353831	A1	20050623	DE 2003-10353831	20031118
	EP 1685144	A1	20060802	EP 2004-791039	20041029
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK				
	CN 1882600	A	20061220	CN 2004-80034094	20041029
PRAI	DE 2003-10353831	A	20031118		
	WO 2004-EP12279	W	20041029		
OS	CASREACT 143:26727; MARPAT 143:26727				
GI					

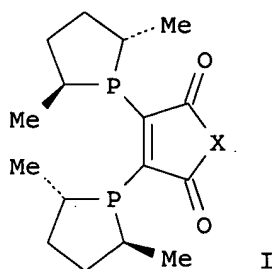


I

AB The present invention is directed at a process for preparing enantiomerically enriched compds. I (R1, R4 = (un)substituted C1-8 alkyl, C2-8 alkoxyalkyl, C6-18 aryl, C7-19 aralkyl, C3-8 cycloalkyl, etc.; R2, R3 = H, (un)substituted C1-8 alkyl, C2-8 alkoxyalkyl, C6-18 aryl, C7-19 aralkyl, C3-8 cycloalkyl, etc.; A = C2 bridge in which two carbon atoms have sp<sup>2</sup> hybridization). Compds. of the type shown are employed in catalyst systems. Thus, preparation of {2,3-bis[(R,R)-2,5-dimethylphospholanyl]maleic anhydride}(cyclooctadiene)rhodium(I) tetrafluoroborate is described in several steps starting from (2S,5S)-2,5-hexanediol.

RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

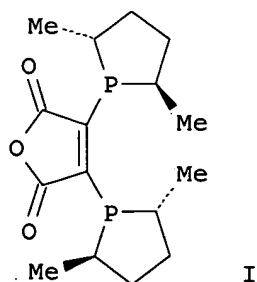
L4 ANSWER 13 OF 21 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2005:108061 CAPLUS  
DN 143:367376  
TI Enantioselective hydrogenation for organic synthesis  
AU Krauter, Juergen; Riermeier, Thomas  
CS Exclusive Synthesis & Catalysts, Degussa, Hanau, Germany  
SO PharmaChem (2004), 3(10), 62-64  
CODEN: PHARGZ; ISSN: 1720-4003  
PB B5 srl  
DT Journal  
LA English  
OS CASREACT 143:367376  
GI



AB Hydrogenation catalysts for alkene and ketone hydrogenation are described. Rhodium complexes of nonracemic phospholanes I (X = O, MeN) (catASium M or MN) are used as homogeneous catalysts for the hydrogenation of either stereoisomer of  $\beta$ -(acetylamino)- $\alpha,\beta$ -unsatd. esters  $\text{AcNHCR:CHCO}_2\text{Me}$  (R = Me, Et,  $\text{Me}_2\text{CH}$ ) to nonracemic  $\beta$ -amino esters  $\text{RCH(NHAc)CH}_2\text{CO}_2\text{Me}$  (R = Me, Et,  $\text{Me}_2\text{CH}$ ) in 80-99% ee under 1 bar of hydrogen pressure; the enantioselectivities are compared to those in the presence of an analogous MeDuPhos rhodium complex under the same conditions. Dispersed platina-on-aluminum catalysts (catASium F214) containing cinchona alkaloids as chiral modifiers are used as heterogeneous catalysts for the hydrogenation of prochiral ketones such as Et pyruvate, 1,1-dimethoxy-2-propanone, or an 4-phenyl-2-oxobutanoic acid ester to the corresponding nonracemic secondary alcs. in 85-95% conversions and in 86-95% ee; general substrate types that are effectively and ineffectively hydrogenated in the presence of this catalyst system are described.

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 14 OF 21 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2004:873342 CAPLUS  
DN 142:279853  
TI Highly enantioselective hydrogenation of itaconic acid derivatives with a chiral bisphospholane-Rh(I) catalyst  
AU Almena, Juan; Monsees, Axel; Kadyrov, Renat; Riermeier, Thomas H.; Gotov, Battengel; Holz, Jens; Boerner, Armin  
CS Degussa Homogeneous Catalysts, Degussa AG, Hanau-Wolfgang, 63457, Germany  
SO Advanced Synthesis & Catalysis (2004), 346(11), 1263-1266  
CODEN: ASCAF7; ISSN: 1615-4150  
PB Wiley-VCH Verlag GmbH & Co. KGaA  
DT Journal  
LA English  
OS CASREACT 142:279853  
GI



AB The new - com. available in multi-kg quantities - chiral bisphospholane

ligand, catASium M (I), has been successfully used in the Rh(I)-catalyzed enantioselective hydrogenation of itaconic acid derivs.  
 $R_2O_2CC(CH_2CO_2R_1):CH_2$  ( $R_1 = R_2 = Me, H$ ;  $R_1 = Me, R_2 = H$ ) and  
 $MeO_2CC(CH_2CO_2H):CHR_1$  ( $R_1 = Ph, CHMe_2$ ). The corresponding chiral  $\beta$ -substituted succinic acid derivs. were produced in good to excellent enantioselectivities. Turnover frequencies by up to 40,000 h<sup>-1</sup> have been achieved.

RE.CNT 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 15 OF 21 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2004:822753 CAPLUS

DN 141:332050

TI Enantioselective hydrogenation of intermediates for the synthesis of tipranavir

IN Klingler, Franz; Steigerwald, Michael; Ehlenz, Richard

PA Boehringer Ingelheim Pharma G.m.b.H. & Co. K.-G., Germany

SO Ger. Offen., 10 pp.

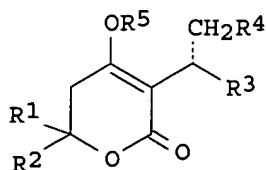
CODEN: GWXXBX

DT Patent

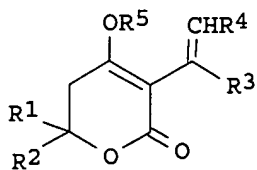
LA German

FAN.CNT 1

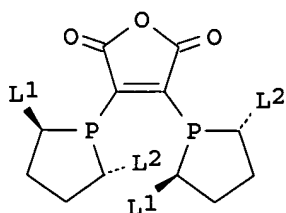
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 10313118	A1	20041007	DE 2003-10313118	20030324
	US 2004224990	A1	20041111	US 2004-797313	20040310
	US 7002017	B2	20060221		
	CA 2520129	A1	20041007	CA 2004-2520129	20040319
	WO 2004085427	A1	20041007	WO 2004-EP2894	20040319
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	EP 1608642	A1	20051228	EP 2004-721858	20040319
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK				
	JP 2006520748	T	20060914	JP 2005-518679	20040319
PRAI	DE 2003-10313118	A	20030324		
	WO 2004-EP2894	W	20040319		
OS	CASREACT 141:332050; MARPAT 141:332050				
GI					



I



II



III

AB The invention concerns a procedure for the production of the compds. I [R1, R2

= H, C1-6-alkyl, C3-8-cycloalkyl, C6-10-aryl, (C1-4-alkylene)-(C6-10-aryl) {optionally substituted 1 - 3 times with OH, NH2, NHCOMe, N(COMe)2, halogen, CF3, C1-4-alkoxy}, with the proviso that R1 ≠ R2; R3 = meta-substituted Ph (substituents selected from F, Cl, Br, I, OH, O3SCF3, NO2, NH2, NHSO2-{4-(trifluoromethyl)pyridin-2-yl}, N(CH2-aryl)2), NY1Y2; Y1, Y2 = H, CO2-alkyl, CO2CH2-aryl, CO-alkyl, CO-aryl; R4 = H, C1-8-alkyl; R5 = H, SiMe3, Li, Na, K, Cs, N(R')4; R' = C1-8-alkyl, CH2-aryl] by enantioselective hydrogenation of the compds. II in presence of special hydrogenation catalysts containing the bisphospholane ligands III [L1, L2 = (un)branched C1-8-alkyl]. The invention is characterized by a high enantioselectivity, whereby the simple entrance to a substance class important drug, i.e. to intermediates of the tipranavir synthesis becomes possible. Thus, I [R1 = α-PH(CH2)2, R2 = β-Pr, R3 = C6H4NO2-3, R4 = Me, R5 = H] was hydrogeanted in MeOH containing Na2CO3 and catalytic Malphos[Rh+(COD)] BF4- to give 80% II with a purity of 98%.

L4 ANSWER 16 OF 21 CAPLUS COPYRIGHT 2007 ACS on STN  
 AN 2004:692344 CAPLUS  
 DN 143:7795  
 TI catASium M - a new family of chiral bisphospholanes and their application in enantioselective hydrogenations  
 AU Riermeier, Thomas; Monsees, Axel; Holz, Jens; Boerner, Armin  
 CS Degussa Homogeneous Catalysts, Degussa AG, Hanau-Wolfgang, 63457, Germany  
 SO Chimica Oggi (2004), (Suppl.), 22-24  
 CODEN: CHOGDS; ISSN: 0392-839X  
 PB TeknoScienze  
 DT Journal  
 LA English  
 OS CASREACT 143:7795  
 AB A new type of bisphospholane, namely catASium M, characterized by varying P-C=C angles and electronic properties of the bridge unit, was developed. Because this type of ligand has a tunable backbone, allowing a wide range of possible bite angles, it allows the building up of a whole toolbox, which can be used to solve different synthetic challenges by combining high asym. induction with tunable bite angle. When the hydrogenation of the important Z-configured substrates bearing bulkier substituents in the 3-position was tested, a catASium M-Rh catalyst bearing the maleic anhydride backbone gave significantly higher enantioselectivities than the related DuPHOS-complex. Improvements of up to 75% ee were observed  
 RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 17 OF 21 CAPLUS COPYRIGHT 2007 ACS on STN  
 AN 2003:818434 CAPLUS  
 DN 139:307895  
 TI Preparation of bisphosphines as bidentate ligands and their use as cocatalysts for asymmetric reactions  
 IN Boerner, Armin; Holz, Jens; Monsees, Axel; Riermeier, Thomas; Kadyrov, Renat; Schneider, Carsten A.; Dingerdissen, Uwe; Drauz, Karlheinz  
 PA Degussa A.-G., Germany  
 SO PCT Int. Appl., 45 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003084971	A1	20031016	WO 2003-EP2162	20030303
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				

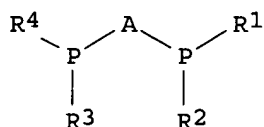
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

CA 2481037	A1	20031016	CA 2003-2481037	20030303
AU 2003212297	A1	20031020	AU 2003-212297	20030303
DE 10309356	A1	20031120	DE 2003-10309356	20030303
EP 1490379	A1	20041229	EP 2003-708169	20030303

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK

BR 2003008970	A	20050111	BR 2003-8970	20030303
CN 1646547	A	20050727	CN 2003-807555	20030303
JP 2005529868	T	20051006	JP 2003-582168	20030303
IN 2004KN01616	A	20060728	IN 2004-KN1616	20041029
US 2005209455	A1	20050922	US 2005-508537	20050512

PRAI DE 2002-10214988 A 20020404  
WO 2003-EP2162 W 20030303  
OS CASREACT 139:307895; MARPAT 139:307895  
GI



I

AB The present invention relates to the preparation of ligands, I (R1-R4 = independent of each other C1-8 alkyl, C2-8 alkoxyalkyl, C6-18 aryl, C7-19 aralkyl, C3-18 heteroaryl, C4-19 heteroaralkyl, C1-8-alkyl-C6-18-aryl, C1-8-alkyl-C3-18-heteroaryl, C3-8-cycloalkyl, C1-8-alkyl-C3-8-cycloalkyl, C3-8-cycloalkyl-C1-8-alkyl; R1-R2, and/or R3-R4 = C3-5 alkylene bridge mono or polysubstituted with C1-8 alkyl, HO-(C1-8)-alkyl, (C1-8)-alkoxy, (C2-8)-alkoxyalkyl, (C6-18)-aryl, etc.; A = (un)substituted heterocyclic structure), useful as cocatalysts with transition metal catalyzed asym. reactions, is described. Thus, reaction of 2,3-dichloromaleic anhydride with (R,R)-2,5-dimethyl-1-trimethylsilylphospholane (preparation given) gave 2,3-bis[(R,R)-2,5-dimethyl-phospholanyl]maleic anhydride which on treatment with [Rh(COD)2]BF4 in THF gave the catalyst which was used for asym. hydrogenation of unsatd. substrates, e.g. Me acetamidocinnamate.

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 18 OF 21 CAPLUS COPYRIGHT 2007 ACS on STN  
AN 2003:719357 CAPLUS  
DN 139:247159  
TI Metal complex catalysts for chemo-, regio- and stereoselective reactions, and corresponding precursors  
IN Sanniccolo, Francesco; Piccolo, Oreste; Benincori, Tiziana; Sada, Mara; Verrazzani, Alessandra; Tollis, Simona; Ullucci, Elio; De Ferra, Lorenzo; Rizzo, Simona  
PA Chemi S.p.A., Italy  
SO PCT Int. Appl., 42 pp.  
CODEN: PIXXD2  
DT Patent  
LA English  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	WO 2003074169	A2	20030912	WO 2003-EP2160	20030303

WO 2003074169 A3 20040325

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

IT 2002MI0415 A1 20030901 IT 2002-MI415 20020301

CA 2478482 A1 20030912 CA 2003-2478482 20030303

AU 2003214088 A1 20030916 AU 2003-214088 20030303

EP 1490173 A2 20041229 EP 2003-709739 20030303

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK

US 2005107248 A1 20050519 US 2003-506305 20030303

JP 2005518926 T 20050630 JP 2003-572674 20030303

PRAI IT 2002-MI415 A 20020301

WO 2003-EP2160 W 20030303

OS MARPAT 139:247159

AB The title catalysts comprise metal complexes derived from ortho-bis(1-phospholanyl)-heteroarenes. The new catalysts are characterized by the presence of two homomorphic phospholanic rings set in adjacent positions of an aromatic pentat. heterocycle. [Rh(COD)(R,R)-2,5-dimethyl-[3,4-bis(2',5'-dimethylphospholanyl)]-thiophene]BF<sub>4</sub> was prepared and used as a hydrogenation catalyst.

L4 ANSWER 19 OF 21 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2003:301092 CAPLUS

DN 138:321403

TI Preparation of chiral (phosphino)benzo[b]thiophenes as ligands for transition metal catalyzed asym. hydrogenation reactions

IN Berens, Ulrich

PA Solvias AG, Switz.

SO PCT Int. Appl., 67 pp.

CODEN: PIXXD2

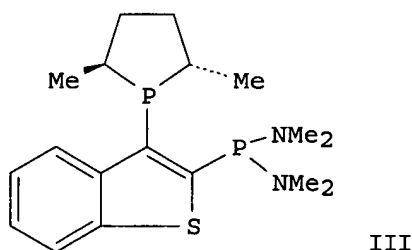
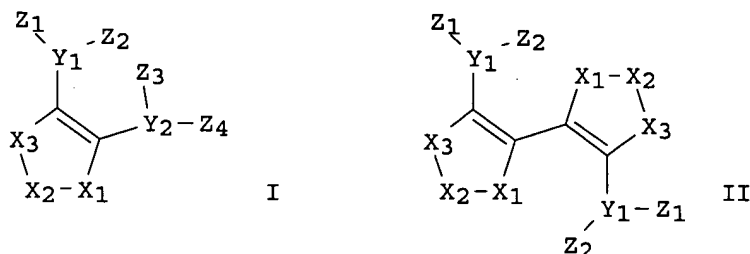
DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003031456	A2	20030417	WO 2002-EP11039	20021002
	WO 2003031456	A3	20030724		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	CA 2458430	A1	20030417	CA 2002-2458430	20021002
	EP 1483273	A2	20041208	EP 2002-800591	20021002
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
	CN 1564824	A	20050112	CN 2002-819761	20021002
	JP 2005504849	T	20050217	JP 2003-534438	20021002
	US 2004260091	A1	20041223	US 2004-491184	20040331
	US 7094907	B2	20060822		
	US 2006241307	A1	20061026	US 2006-473035	20060623

PRAI EP 2001-810975 A 20011005  
 WO 2002-EP11039 W 20021002  
 US 2004-491184 A3 20040331  
 OS MARPAT 138:321403  
 GI



AB Chiral phosphines [I and II; wherein Y1, Y2, Y3, independently = element of the fifth group of the periodic table of elements (e.g., P) as such or in thioxo or oxo form; Z1, Z2, Z3, Z4, independently = halo, other organic residue capable of binding to an element of the fifth group of the periodic table of elements, amino, nitrogen heterocycle, or various combinations of which form bridges; X1 = amino, O, S; X2 = substituted C; X3 = amino, substituted C] were prepared. For example, benzo[b]thiophene phosphine (III) was prepared by a multistep synthesis. The ligand complexes are useful as ligands in transition metal catalyzed asym. hydrogenation of various organic mols. For example, III was reacted with [Rh(COD)acac] and the resulting complex catalyzed the asym. hydrogenation of Me 2-acetamidoacrylate in up to 99% ee.

L4 ANSWER 20 OF 21 CAPLUS COPYRIGHT 2007 ACS on STN  
 AN 2003:114261 CAPLUS  
 DN 138:287918  
 TI Synthesis of a New Chiral Bisphospholane Ligand for the Rh(I)-Catalyzed Enantioselective Hydrogenation of Isomeric  $\beta$ -Acylamido Acrylates  
 AU Holz, Jens; Monsees, Axel; Jiao, Haijun; You, Jinsong; Komarov, Igor V.; Fischer, Christine; Drauz, Karlheinz; Borner, Armin  
 CS Institut fuer Organische Katalyseforschung, Universitaet Rostock e.V., Rostock, 18055, Germany  
 SO Journal of Organic Chemistry (2003), 68(5), 1701-1707  
 CODEN: JOCEAH; ISSN: 0022-3263  
 PB American Chemical Society  
 DT Journal  
 LA English  
 OS CASREACT 138:287918  
 AB The highly stereoselective synthesis of a chiral silylphospholane has been described, which can be advantageously used as a building block under



base-free conditions for the construction of diphosphines related to DuPHOS. The utility of silylphospholane is shown in the synthesis of a new bisphospholane ligand (MalPHOS), which is characterized by a maleic anhydride backbone. The ligand forms with Rh(I) a complex with a larger bite angle P-Rh-P than the analog Me-DuPHOS complex. Both complexes have been tested in the asym. hydrogenation of unsatd.  $\alpha$ - and  $\beta$ -amino acid precursors of pharmaceutical relevance. In several cases, the new catalyst was superior in comparison to the Me-DuPHOS complex, in particular when (Z)-configured  $\beta$ -acylamido acrylates were used as substrates.

RE.CNT 64      THERE ARE 64 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4      ANSWER 21 OF 21    CAPLUS    COPYRIGHT 2007 ACS on STN

AN      2000:585173    CAPLUS

DN      133:350329

TI      Rationally designed improvement of the bis(phospholano)ethane ligand for asymmetric hydrogenation leads to a reappraisal of the factors governing the enantioselectivity of Duphos catalysts

AU      Fernandez, Elena; Gillon, Amy; Heslop, Katie; Horwood, Emily; Hyett, David J.; Orpen, A. Guy; Pringle, Paul G.

CS      Dep. Quim. Fis. Inorg., Universitat Rovira i Virgili, Tarragona, Spain

SO      Chemical Communications (Cambridge) (2000), (17), 1663-1664

CODEN: CHCOFS; ISSN: 1359-7345

PB      Royal Society of Chemistry

DT      Journal

LA      English

AB      Enhancement of enantioselectivity in hydrogenations catalyzed by  $\delta$  vs.  $\lambda$  Rh chelate complexes of trans-1,2-bis(phospholano)cyclopentanes cannot be rationalized using the current quadrant model for Duphos ligands and therefore a new consistent model is suggested.

RE.CNT 13      THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT